Course Syllabus

CARDIOVASCULAR DISEASES

Course Coordinator: Prof. P. Golino

CFU: 8
Total number of hours: 96

Teachers:

Professors:
Paolo Golino MED/11 (paolo.golino@unicampania.it)
Paolo Calabrò MED/11 (paolo.calabro@unicampania.it)
Maria Giovanna Russo MED/11 (mariagiovanna.russo@unicampania.it)
Gerardo Nigro MED/11 (gerardo.nigro@unicampania.it)
Alessandro Della Corte MED/23 (alessandro.dellacorte@unicampania.it)
Giuseppe Limongelli MED/11 (giuseppe.limongelli@unicampania.it)
Giovanni Cimmino MED/11 (giovanni.cimmino@unicampania.it)

Course Objectives

Upon completion of this course, students will have achieved the following level of learning objectives:

1. To further understanding of cardiovascular physiology including structure, function, hemodynamics, and electrocardiography.
2. Summarize for the following diseases or therapeutic conditions (hypertension, dyslipidemia, acute coronary syndrome, secondary prevention of coronary artery disease, heart failure, atrial fibrillation, stroke, peripheral arterial disease, venous thromboembolism) the etiology, pathophysiology, epidemiology, clinical presentation, risk factors, risk stratification, prevention and natural history
3. Differentiate the pathophysiology of common cardiovascular diseases (e.g., dyslipidemias, arrhythmias, heart failure, acute coronary syndrome, hypertension, pericardial and myocardial disease).
4. Identify the appropriate physical exam (e.g., vascular, chest, neuro, peripherals) clinical biochemistry (e.g. lipid profile, cardiac markers, electrolytes, BNP, hsCRP), and medical imaging and tests findings (e.g. coronary angiogram, cardiac stress testing, electrocardiogram, cardiac ultrasound, CT, MRI, VQ scan, ABI) used in the diagnosis and on-going monitoring of the listed disease states.
5. Discuss the non-drug measures used to manage the listed disease or therapeutic conditions.
6. Pills of pharmacological strategies

Lesson Plans

Cardiology

Anatomy and physiology of the heart and the vascular system – Cardiac Cycle – Coronary flow regulation - Basic mechanisms of cardiac impulse generation and propagation – Cardiac propagation system – Fundamentals in electrocardiography.

Imaging in Cardiology- Xray. - Echocardiogram – Nuclear Imaging - Cardiac catheterization and Coronary angiography– CT scan and NMR.

Cardiac Muscle disease -Mechanisms of contraction and relaxation- Volume and pressure overload – Hypertrophy and dilatation of cardiac chambers.– Heart Failure - cardiomyopathy and myocarditis – Ventricular assistant device – Heart Transplant

Cardiac Arrhythmias- Epidemiology, Genetics, Genesis. Supraventricular and Ventricular Arrhytmyas. Fundamentals of treatment

Valvular Disease – pathophysiology, signs, symptoms, fundamentals of treatment

Pericardial disease and Endocarditis - pathophysiology, signs, symptoms, fundamentals of treatment

Ischemic heart disease- Epidemiology and Risk Factors - Atherosclerosis – Platelets and Coagulation – Chronic Myocardial Ischemia – Acute Coronary Syndromes – Fundamentals of treatment

Congenital Heart Disease.- Classification of the congenital heart disease - Atrial Septal Defect. - Ventricular Septal Defect. - Patent ductus arteriosus. - Pulmonary Stenosis. - Tetralogy of Fallot. - Transposition of the Great Arteries. - Aortic Stenosis. - Aortic Coarctation.

Cardiac Surgery

Fundamentals – Extra-corporeal circulation – Myocardial protection – Surgical accesses – Invasive monitoring of the cardiosurgical patient

Heart valve surgery – Mitral stenosis - Mitral regurgitation - Aortic stenosis - Aortic regurgitation - Tricuspid regurgitation - Infective endocarditis - Valve prostheses

Surgery for coronary artery disease – Coronary revascularization: principles – Coronary revascularization: indications – Coronary revascularization: techniques – Surgery for mechanical complications of myocardial infarction - Intra-aortic balloon pump

Surgery of the aorta – Causes and forms of aortopathy – Aortic aneurysm: surgical indications and techniques - Aortic dissection: surgical indications and techniques – Endovascular treatment of the aorta

Surgery for chronic heart failure – Heart transplant – Ventricular assistance devices

Cardiac tumors – Mixoma – Angiosarcoma

Vascular Surgery

Fundamentals – Arterial and vein anatomy – Surgical accesses –Invasive and non-invasive approach to the vascular patient

Carotid artery disease – Pathophysiology - Clinical and diagnostic approach – fundamentals of medical and surgical therapy

Deep vein thrombosis and thrombophlebitis – Pathophysiology - Clinical and diagnostic approach – fundamentals of medical and surgical therapy

Peripheral artery disease – Acute and chronic limb ischemia: Pathophysiology - Clinical and diagnostic approach – fundamentals of medical and surgical therapy

Vein disease – Varicose Veins, Swelling and Ulcers: Pathophysiology - Clinical and diagnostic approach – fundamentals of medical and surgical therapy

Recommended Resources/Textbooks/Readings:

1) Braunwald E. Heart Disease. EDRA, VII Edizione, 2007 (Cardiology section.)
2) Harrison T. Principles Of Internal Medicine. CEA, XIX Edizione, 2016 (Cardiology section.)

Recommended web site:
American Heart Association: www.americanheart.org

American College of Cardiology www.acc.org

European Society of Cardiology: www.escardio.org

Exam Format

Oral discussion between the examiners and the students on the cardiovascular diseases as indicated in the lesson plans.

Class attendance and exam policies
Students are expected to attend at least 75% of all classes. Exams will be taken on the assigned time and date.

Office hours
Please contact professors by email for an appointment